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### What is claimed is:

1. A method of retrieving channel characteristics for a discrete multi-tone communication channel comprising the steps of:

at initialization, determining and storing channel frequency response and noise measurements at a CO end of the channel;

at show time, determining and storing a signal-to-noise measurement at said first end;

at a CPE end of the channel, retrieving at least one of the stored measurements; and

receiving data at the CPE end at a rate in dependence upon the one or more of the retrieved measurement.

2. A method as claimed in claim 1 wherein the channel is symmetrical.

3. A method as claimed in claim 1 wherein the channel is asymmetrical.

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- 4. A method as claimed in claim 1 wherein the channel is overlapping.
- 5. A method as claimed in claim 1 wherein the channel is non-overlapping.
- 5 6. A method as claimed in claim 1 wherein the channel is ADSL.
  - 7. A method as claimed in claim 1 wherein the channel noise is N(f).
- 8. A method as claimed in claim 1 wherein the channel frequency response is 10 H(f).
  - 9. A method as claimed in claim 1 wherein the signal-to-noise measurement is SNR(f).
- 15 10. An apparatus for retrieving channel characteristics for a discrete multi-tone communication channel comprising:

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- a circuit for at initialization, determining and storing channel frequency response and noise measurements at a CO end of the channel;
- a circuit for at show time, determining and storing a signal-to-noise measurement;
- a circuit for at a CPE end of the channel, retrieving at least one of the stored measurements; and
  - a circuit for transmitting to the CPE end at a rate in dependence upon the retrieved measurement.
  - 11. An apparatus as claimed in claim 10 wherein the channel is symmetrical.
    - 12. An apparatus as claimed in claim 10 wherein the channel is asymmetrical.
    - 13. An apparatus as claimed in claim 10 wherein the channel is overlapping.
    - 14. An apparatus as claimed in claim 10 wherein the channel is non-overlapping.

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- 15. An apparatus as claimed in claim 10 wherein the channel is ADSL.
- 16. An apparatus as claimed in claim 10 wherein the channel noise is N(f).
- 5 17. An apparatus as claimed in claim 10 wherein the channel frequency response is H(f).
  - 18. An apparatus as claimed in claim 10 wherein the signal-to-noise measurement is SNR(f).
  - 19. A method of retrieving channel characteristics for a discrete multi-tone communication channel comprising the steps of:

at a CO end of the channel, retrieving from a CPE end of the channel, at least one of the channel frequency response, noise measurement or signal-to-noise measurement that were previously determined and stored at said CPE end; and,

at the CO end, receiving data from said CPE end, at a rate in dependence upon one or more of the retrieved measurements.

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- 20. A method as claimed in claim 19 wherein the retrieved channel frequency response was determined and stored at said CPE end during the initialization of said CPE end.
- 5 21. A method as claimed in claim 19 wherein the retrieved noise measurement was determined and stored at said CPE end during the initialization of said CPE end.
  - 22. A method as claimed in claim 19 wherein the retrieved signal-to-noise measurement was determined and stored at said CPE end during show time at said CPE end.
  - 23. A method of retrieving channel characteristics for a discrete multi-tone communication channel comprising the steps of:
- at a CPE end of the channel, transmitting to a CO end of the channel, at least
  one of the channel frequency response, noise measurement or signal-to-noise
  measurement that were previously determined and stored at said CPE end; and,

at the CPE end, sending data from to said CO end at a rate in dependence upon one or more of the transmitted measurements.

- 24. A method as claimed in claim 23 wherein the channel frequency response is determined and stored at said CPE end during the initialization of said CPE end.
- 25. A method as claimed in claim 19 wherein the noise measurement is
   determined and stored at said CPE end during the initialization of said CPE end.
  - 26. A method as claimed in claim 19 wherein the signal-to-noise measurement is determined and stored at said CPE end during show time at said CPE end.
- 10 27. A method comprising the steps of:

retrieving the in-band downstream or upstream ADSL channel frequency response H(f), the noise N(f), as measured at initialization and the signal to noise ratio SNR(f) measured at show time on a per bin basis.

## 15 28. An apparatus comprising:

a register for storing measurements of in-band downstream or upstream ADSL channel frequency response H(f), the noise N(f), measured at initialization and the signal to noise ratio SNR(f) measured at show time, respectively on a per bin basis; and

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a circuit for retrieving measurements of in-band downstream or upstream ADSL channel frequency response H(f), the noise N(f) and the signal to noise ratio SNR(f) during show time.

# 29. A method comprising the steps of:

retrieving the in-band downstream or upstream discrete multi-tone based VDSL channel frequency response H(f), the noise N(f), as measured at initialization and the signal to noise ratio SNR(f) measured at show time on a per bin basis.

# 30. An apparatus comprising:

a register for storing measurements of in-band downstream or upstream discrete multi-tone based VDSL channel frequency response H(f), the noise N(f), measured at initialization and the signal to noise ratio SNR(f) measured at show time, respectively on a per bin basis; and

a circuit for retrieving measurements of in-band downstream or upstream discrete multi-tone based VDSL channel frequency response H(f), the noise N(f) and the signal to noise ratio SNR(f) during show time.